

REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Upon entry of this Request, claims 1-40 and 42 are pending in the application with claims 13-35, 37, 38, 40 and 42 withdrawn from consideration as being directed to a non-elected invention.

Applicant respectfully submits that the pending claims define patentable subject matter.

Claims 1-8, 36 and 39 are rejected under 35 U.S.C. § 102(e) as being anticipated by Lyster. Applicant respectfully submits that the claimed invention would not have been anticipated by or rendered obvious of Lyster.

By this Amendment, Applicant has amended independent claim 1 to clarify that both the amplitude and the duration of the second phase waveform can be controlled.¹ As set forth in the Amendment filed December 9, 2003, only the duration of the second phase waveform can be controlled by the Lyster's H-bridge circuit. Further, the second phase waveform of Lyster is determined in accordance with the duration of the first phase waveform. On the other hand, according to the present invention, the second phase waveform can be controlled irrespective of the duration of the first phase waveform.

Further, claim 2 has been amended to clarify that the duration of the second phase waveform and the delivered energy during the duration can be independently controlled. As set forth in the Amendment filed December 9, 2003, according to the Lyster's H-bridge circuit, the delivered energy is uniquely determined by the duration of the second phase waveform.

¹ See for example, page 55, line 19 - page 75, line 57.

In the conventional H-bridge circuit (utilizing four switches) of Lyster, the waveform of an output signal must be a truncated exponential waveform. The output voltage of the truncated exponential waveform is naturally determined by a duration, a capacitance of a condenser and an impedance of a load (including the inductance in Lyster). In a configuration using the conventional H-bridge circuit, only a duration of the output signal is positively controlled. The outputted energy is naturally determined in accordance with the duration.

In the present invention, as shown in Figs. 6(a)-6(d), the second phase waveform can be controlled arbitrarily within a range of energy remaining in the electric energy storage section (capacitor 104). Specifically, a reference curve (e.g., Figs. 8(a) and 8(b)) is set to determine a time-dependent variation of an on/off duty of the first switch means, so that the output waveform is thus determined. The shape of the reference curve is arbitrary. Even if the duration of the second phase waveform is fixed, the output voltage during the duration can be arbitrarily controlled in accordance with the method of the present invention.

Further, in a case where the duration of the stimulation pulse is fixed, the energy supplied by the truncated exponential waveform is limited in accordance with the living body impedance. When the living body impedance becomes small, the supplied energy becomes large, and vice versa.

The present invention teaches a power-constant waveform as one of arbitrary waveforms to be output. In this case, although the duration of the stimulation pulse is fixed, the constant energy can be supplied to a living body within the duration, irrespective of the impedance value of the living body.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. Patent Application No. 09/800,788

Accordingly, Applicant respectfully submits that claims 1-8, 36 and 39 should be allowable because Lyster does not teach or suggest the output control means of independent claims 1 and 2.²

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Christopher R. Lipp
Registration No. 41,157

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: November 29, 2004

Attorney Docket No.: Q63269

² In rejecting a claim with a "means plus function" limitation, 35 U.S.C. § 112, sixth paragraph, requires that (1) the prior art element perform the identical function specified in the means plus function limitation, and (2) the prior art element's structure must be the same as or equivalent to the structure corresponding to the claimed means.